

<b>Office Action Summary</b>	<b>Application No.</b> 09/866,920	<b>Applicant(s)</b> IWAKIRI, TOSHIHIKO	
	<b>Examiner</b> Asok K. Sarkar	<b>Art Unit</b> 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-13, 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-5, 14, 15 and 18-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. The restriction requirement provided in the Office Action mailed January 27, 2003 is withdrawn. All claims were examined for this Office Action that follows.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 5, 14, 15 and 18 – 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoo, US 5,661,338.

Regarding claim 1, Yoo teaches a semiconductor device comprising:

- a die pad 3 (see Fig. 2);
- a die pad supporter denoted by letter T (see Fig. 2) which supports said die pad;
- a plurality of inner leads 8 (see Fig. 2) arranged to surround said die pad; and a semiconductor chip denoted by C (see Fig. 2) which has a size larger in area than that of said die pad 3 and which is mounted on said die pad (see Fig. 2);
- wherein said die pad support has a stress absorbing portion (the support and the reference numerals 5 are for stress absorption) which is located between said die pad 3 and ends of said inner leads 8, wherein said semiconductor chip C is disposed over the stress absorbing portion, and
- wherein a part of said die pad supporter is located between a pair of said inner

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leads 8 and extends along the pair of said inner leads (both sides of the leads 8).

Regarding claim 2, Yoo teaches the stress absorbing portion of the support T includes a bent portion extended in a direction different from the direction in which the die pad supporter extends (see Fig. 2).

Regarding claim 3, Yoo teaches stress absorbing portion includes a hole 5 (see Fig. 2).

Regarding claim 4, Yoo teaches the chip C is adhered to the die pad 3 in column 3, lines 30 – 35.

Regarding claim 5, Yoo teaches many limitations of the claim as described earlier in rejecting claim 1. Yoo further teaches the die pad supporter T has a first portion (portions parked with letter T), a pair of second portions (portion outside the rectangular outline), and a pair of third portions (portion inside the rectangular outline), wherein said first portion is disposed between a pair of said inner leads 8 and extends along the pair of said inner leads 8 , and wherein one end of each of said second portions connect to one end of said first portion T, and said each of said second portions extend in a direction different from a direction in which said first portion is extended, and wherein one end of each of said third portions each connects to another end of respective said second portions and another end of each of said third portions are connected to the die pad 3.

Regarding claims 14 and 15, Yoo teaches the die pad supporter T has a down-set portion (located near reference T) which is located at an area between the pair of inner leads 8.

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Regarding claims 18 – 22, Yoo teaches the slit 5 (claim 18), protruding and concave portion (claim 19), S-shaped configuration (claim 20) with reference to Figs. 3 – 5, supporter extending in a direction parallel to the pair of inner leads 8 (see Fig. 2).

***Allowable Subject Matter***

4. Claims 6 – 13, 16 and 17 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Claims 6 – 9 and 16 recite, inter alia, a semiconductor device where the die pad supporter includes a rectangular frame portion, a first portion connected between the side of the frame and the die pad and a second portion extending from the corner portion to between a pair of inner leads. The art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Claims 10 – 13 and 17 recite, inter alia, a semiconductor device where the first die pad supporter supports a frame portion from four directions, and the second supporter connects to the frame portion and extends along a second direction different from the direction of the first supporter. The art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

***Conclusion***

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asok K. Sarkar whose telephone number is 571 272 1970. The examiner can normally be reached on Monday - Friday (8 AM- 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571 272 1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Asok K. Sarkar  
March 9, 2004

Patent Examiner